REMARKS

Reconsideration of the subject application as amended herein is respectfully requested.

The Examiner has rejected claims 1, 19, 22, 25 and 28 under 35 USC 112 as being indefinite.

In response, claim 1 has been amended to better describe the connections of the feedback resistor so as to conform to the Figures, essentially as the Examiner had proposed.

Claims 19 and 25 have been amended to incorporate the amplifier and the feedback resistors. Support for this amendment can be found on pages 10 through 12, and, further, on page 15 of the specification.

Claims 22 and 28 have been amended to define the junction as shown in the Figures.

It is respectfully submitted that these corrections overcome the Section 112 rejection.

Briefly, the present invention pertains to a circuit that detects and monitors light sensed by a photodetector and generates a corresponding output. The circuit includes a trans-impedance amplifier. In prior art circuits, when the light intensity reached a high value, the output of the photodetector caused the trans-impedance amplifier to saturate, and, as a result, further variations of light were not detected. The present invention solves

this problem by providing therein a current-detecting limiter that generates a limiting current in the presence of excessive light. The limiting current prevents the trans-impedance amplifier from saturating.

On the merits of the application, the Examiner had rejected claims 19 and 25 as being anticipated by the German (DE) reference, as well as the Denoyer and the Nishizono references. The Examiner relies on all three references for teaching a circuit in which "the input current to the photo detector" is limited.

1. Specifically, the German reference discloses a circuit arrangement for a dynamic control that can be operated with different input levels. The Examiner seems to be of the opinion that elements 2, 3 and 4 are representative of a trans-impedance amplifier (TIA) and, thus, anticipate the disclosure of the same in claims 19 and 25. However, since the trans-impedance amplifier should receive a current and output voltage, only the element 2 of the DE can be identified as corresponding to the trans-impedance amplifier. The elements 4 and 5 are merely switches and the elements 3 and 5 are comparators, not the trans-impedance amplifier.

Also, in claims 19 and 25, as amended, the trans-impedance amplifier generates a current, in response to which the current detecting limiter generates a limiter current to prevent the TIA from saturation. The comparators 3 and 5 of the DE reference only detect the output voltage of the TIA and flow the limiter current according to the detected voltage value. Thus, it is apparent that the comparators 4 and 5 perform differently from the TIA function and can not anticipate the applicants' disclosure.

2. In regard to Denoyer et al, the Examiner states that, in Fig. 3, Q0-Q1, Q3, Q4, 210 and 212 feature a transe-impedance amplifier converting and amplifying the photo current to generate an output voltage (output of 212) and generating first and second output current (output currents pass through input resistors of 214), a current detecting limiter (Q2) generating a limiter current in response to the first and second current "so that the trans-impedance amplifier is prevented (to limit the input current to the photo detector)" as called for in claims 19 and 25. However, the circuit shown in Fig. 3 does not disclose anything corresponding to the TIA features which should essentially require a feedback resistor connected between the input and the output of the TIA in order to transfer the input impedance to the output. The resistors of the circuit shown in Fig. 3, however, are connected to the ground. Also, the TIA, as shown in claims 19 and 25, has the current input and the voltage output, whereas the circuit shown in Fig. 3 of Denoyer et al. has voltage input and voltage output. Further, in regard to the Examiner's opinion referring to Q2 of Fig. 3 as being the current detecting limiter, it is respectfully submitted that, unlike the applicants' invention, the Q2 does not generate a current in response to the current generated by the amplifier, but just changes the voltage gain. Finally, the TIA shown in Denoyer et al. pertains to a wide dynamic range using an auto gain control circuit which has a mechanism basically different from the limiter current mechanism of the present invention. Thus, Denoyer et al. fails to disclose the invention of claims 19 and 25.

3. In regard to Nishizono, the Examiner states that RF2 and 23b correspond to the current detecting limiter of claims 19 and 25. However, RF2 and 23b constitute the TIA

itself, and thus can not possibly detect the current generated by the same, nor generate a limiter current in response to the current generated by the TIA. Further, the Examiner indicates that RF1, 21 and 23a of the Nishizono reference show the same feature as called for in claims 19 an 25. It should be noted that, in contrast to the claimed invention, these elements do not include an amplifier generating a current that is to be detected by the detecting limiter.

It is respectfully submitted that none of the references disclose the features found in presented claims 1-30, and accordingly, these references fail to anticipate the claimed invention.

In light of the foregoing Amendment and Remarks reconsideration of the above-mentioned rejections and, accordingly, allowance of the claims are respectfully requested.

No fee is deemed necessary in connection with the filling of this Amendment. If any fee is required, Commissioner is hereby authorized to charge the amount of any such fee to the Deposit Account No.07-1730, Docket No. 4611-030. A duplicate copy of this communication is attached for that purpose.

Respectfully submitted,
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